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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/842,002	04/25/2001	Keith Leon Clark	L-2188-4	7736

7590 06/04/2002

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EXAMINER

NGUYEN, TUYEN T

ART UNIT

PAPER NUMBER

2832

DATE MAILED: 06/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/842,002

Applicant(s)

Clark et al. *MC*

Examiner

Tuyen T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-39 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Apr 25, 2001 is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 3 6) ☐ Other:

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DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
 - Applicant should list related applications on the first page of the specification.

Appropriate correction is required.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the outer edges of the end surfaces pole pieces being connected together defining a non-symmetrical diamond air gap, the intermediate areas of the end surfaces of the pole pieces having different shape and the air gap being filled with a low permeability material must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 24 and 26 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant fails to disclose an adequate written description of the outer edges of the end surfaces pole pieces being connected together defining a non-symmetrical diamond air gap and the intermediate areas of the end surfaces of the pole pieces having different shape.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 22-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 22, line 5, the term “substantially” is a relative term. Applicant should clarify what is intended by the air gap having a configuration which “results in said inductance of said choke *gradually changing with an output current of the welder without saturation in said air gap thereby eliminating inflection points during operation of said welder.*” Claims 23-28 inherit the defects of the parent claim.

Regarding claims 23 and 25, the term “substantially” is a relative term.

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Regarding claims 24 and 26, applicant should clarify the structure of the *non symmetrical diamond air gap and the intermediate areas having different shape*.

Regarding claim 28, applicant should clarify the *sufficient size* of the core/winding in order to prevent saturation.

Regarding claim 29, line 6, the term “substantially” is a relative term. Applicant should clarify what is intended by the air gap having a configuration which “results in said inductance of said choke *gradually changing with an output current of the welder without saturation in said air gap thereby eliminating inflection points during operation of said welder.*” In lines 9-10, applicant should clarify what is intended by “said winding and said core having a size.” Claims 30-39 inherit the defects of the parent claim.

Regarding claims 30, 31 and 39, the term “substantially” is a relative term.

Regarding claims 31 and 32, there is no antecedent basis for “diamond shaped air gap.”

Regarding claim 37, applicant should clarify what is intended by the air gap having configuration that “causes said inductance of said choke to *gradually vary over a current range in an inverse relationship with a weld current.*”

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 22-39, as best understood in view of the rejection under 112 first and second paragraphs, are rejected under 35 U.S.C. 103(a) as being unpatentable over Bergman [US 1,353,711] in view of Saitoh et al. [US 5,204,653] and EPO 0 729 040 A1.

Bergman discloses an electric welding apparatus comprising:

- a core structure [26, 27] including two center pole pieces [24, 25] defining an air gap [20] therebetween, wherein each of the pole piece having two outer edges; and
- a winding [21].

Bergman discloses the instant claimed invention except for the specific structure of the pole piece/air gap and the outer edges of the pole pieces being connected.

Saitoh et al. discloses an electromagnetic induction device including a core structure [50] having two pole pieces [51], wherein the two pole pieces having outer edges being connected together forming an air gap therebetween.

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to use the outer edges connection design of Saitoh et al. in Bergman for the purpose of providing closed magnetic circuit.

Bergman in view of Saitoh et al. discloses the instant claimed invention except for the air gap being a diamond shape.

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EPO 0 729 040 A1 discloses a core structure having two pole pieces including end surfaces defining a substantially V-shaped intermediate area with the intermediate areas forming a symmetrical diamond shaped air gap therebetween.

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to use diamond shaped air gap design of EPO 0 729 040 A1 in Bergman, as modified, for the purpose of controlling the inductance of the device.

Regarding claims 27 and 36, Saitoh et al. discloses a low permeability material filled in the air gap.

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to fill the air gap of Bergman's device with a low permeability material, as suggested by Saitoh et al., for the purpose of controlling the magnetic field of the device.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tuyen T. Nguyen whose telephone number is (703) 308-0821.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Elvin Enad, can be reached at (703) 308-7619. The fax number for this Group is (703) 305-7724.

Any inquiry of a general nature or relating to status of this application of proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

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May 30, 2002

Tracy T. Nguyen